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The Problem of Division of Time Between Experiment Station and College
Work of Staff Members Doing Both Research and Teaching

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The services of the expert workers of an educational institution are generally considered to be its most valuable assets. As such they are in demand both for teaching and research. This is particularly true in the land-grant colleges where research by the agricultural experiment stations is one of the important functions, and where in consequence there is a strong demand for the best talent for research as well as for teaching.

Evidence of this multiple demand which exists in the State agricultural experiment stations attached to land-grant colleges is to be found in the statistics of their personnel. For the year ended June 30, 1938, there were some 4,239 research workers in the experiment stations. Of these, 2,106 or about 50 percent devoted full time to research, 1,923 or about 45 percent did both research and teaching, 61 or about 1.4 percent did both research and extension work, and 149 or about 3.6 percent combined all three activities. This typical annual picture indicates that half of the experiment station personnel divide their time between the experiment station and the college, mostly between research and teaching.

During the fiscal year 1937, a typical year and the last year for which the data are complete, the salaries paid to station personnel totaled nearly \$8,500,000. A little less than half of this was paid from Federal-grant funds for research. However, the amount paid for salaries from these Federal-grant funds amounted to nearly 70 percent of the total of the Federal-grant funds

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expended by the stations that year. Since nearly half of the station personnel is on a part-time teaching basis and nearly 70 percent of the Federal-grant funds for research are expended for salaries, it is understandable that the Federal Government and the land-grant colleges are both vitally concerned in reaching a sound basis for division of time of workers engaged in both teaching and research.

It seems well known that the several Federal-grant acts authorizing the payment of funds to the States for agricultural research do not permit the use of these funds for any purpose other than research in the lines of work authorized. In the early days of the Hatch Act it appears to have been established that some of the land-grant colleges were either directly or indirectly paying salaries out of the Hatch fund to employees for time actually devoted to teaching. The Department of Agriculture in interpreting the Hatch Act ruled definitely against this practice. The Department's ruling in effect was that no portion of the funds appropriated by the Hatch Act can be applied to payment of salaries of professors or teachers or other persons while engaged in instruction in the agricultural colleges, nor to the payment of any other expenses connected with the work of instruction in such colleges. The Attorney General of the United States, in his decision under date of May 10, 1899, confirmed this ruling. He described the original Land-Grant College Act of July 2, 1862, and subsequent supplementary acts, and discussed the Hatch Act and then pointed out "That these respective appropriations for agricultural colleges and schools and for the experiment stations are separate and distinct and that each is intended exclusively for and to be applied alone to the expenses of the institution for which it is made."

As the agency charged with the administration of the Federal grants for research, it is the duty of the Office of Experiment Stations to see that the principles laid down in these rulings are not violated, that appropriations for research be applied only to the expenses of research. It is obvious that any situation resulting in payments of salaries to station workers from these Federal funds in excess of the services rendered to research in the conduct of appropriate research would involve a violation of these principles, and a misuse of the funds.

A typical situation frequently encountered is where the head of a department of a land-grant college receives a portion of his salary from Federal-grant research funds and is listed as leader of several Federal-grant projects of the experiment station but is unable to contribute any appreciable portion of his time to the prosecution of the projects owing to the load of teaching and administrative duties imposed upon him. Obviously, merely placing a man's name on a research project in this manner as one of its leaders does not in itself justify payment of any part of his salary from research funds. In order to comply with the spirit and letter of the Federal-grant acts it is necessary that the man assigned to a research project as one of its leaders actually participate in its prosecution if any part of his salary is to be paid from the Federal-grant fund supporting the project. Otherwise there is no choice other than to request that suitable adjustment be made. It is believed that the same principle should govern also in the case of research funds from other than Federal origin.

Entirely apart from the avoidance of penalties applicable to or adjustments necessary to correct such misuse of research funds, the equitable adjustment of part-time salaries is extremely important to each experiment station. Any failure to receive full research service from the salary funds

allotted for such service results in a corresponding failure on the part of the station to serve in full measure the agriculture of the State and to meet its obligation to the public which provides the research funds in good faith. Of equal concern to the Government and the experiment stations, therefore, is how the experiment stations may make the best use of the Federal grants and other funds for research in the employment of expert personnel and at the same time adhere strictly to the limitations imposed on their use either by statute or inference.

Actual participation in research is of course a basic essential. Such participation may take various forms. The most common and tangible form is actual participation by a trained specialist in carrying out the details of manipulation of research projects, including especially the major phases of planning, exercise of expert judgment, and the drawing of logical and scientifically sound conclusions based on progress findings. Another less tangible but very useful form of participation is where an outstanding leader in some field of research carries on several related studies at the same time through the help of a number of carefully selected assistants. In such cases the brilliant mind of the leader directs the entire procedure and the use of expert assistants simply reinforces the leader by several pairs of hands and manipulative minds.

It is easy to understand why there is demand on the time of such men for teaching. Frequently there is no way for the experiment station to obtain the services of such scientific leaders other than on the basis of part-time teaching. Furthermore, unless such outstanding men are allowed to teach part time, or at least to direct a certain number of graduate students, there is frequently no other way to assure that promising young men will be trained properly and adequately to carry on in certain important fields.

Leaders in education have come to recognize, however, that definite limitations must be imposed on the instructional duties assigned to these leaders in

science if they are to function most effectively. Many colleges and universities now recognize that the teaching efficiency of a full-time instructor may be endangered if he assumes responsibility for more than 16 hours of teaching per term or semester. In some institutions from 12 to 14 hours is considered a full-time load.

It would appear similarly logical and wise that the experiment stations give attention to means for insuring the maintenance of effectiveness in research. The research worker who also teaches should have opportunity for such consecutive time for research, free from interruptions or other demands on his time, as his research projects require. In arriving at desirable adjustments of time it is obviously impractical to apply rigid mathematical formulae. The problem differs with the character of the research and is complicated by the time demands of other institutional duties such as committee meetings, speaking engagements, service work, and the like, and in the case of department heads the added duties of administration.

Because of these other institutional demands, it is rarely possible for the experiment station to receive a proportionate share of the effective time of a part-time worker when the salary adjustment for research is based on a fractional part of the credit hours accepted as a full-time teaching load. The worker who receives half of his salary for 8 hours of teaching may find it impossible to give a full half-time to the work of the station. Even though equivalent clock hours are devoted to each type of work, their distribution may reduce the effectiveness of the research program. When research assignments involve even smaller proportions of time they may sometimes become well-nigh non-contributory to research accomplishments. In general, it is the observation of the Office of Experiment Stations that assignments of one-quarter time or less to research seldom give the workers adequate consecutive time to carry on effectively the types of work contemplated by the Federal-grant acts.

Under the circumstances, the logical conclusion is that in planning a research project an estimate should be made at the outset of the amount and distribution of time which able research workers will require to prosecute it with the promptness, scientific precision, and vigor justified by the subject. If the circumstances are such that only full-time research workers can perform the task adequately it would be unwise to assign divided time workers to such research. If, however, the project is of such a nature that divided time workers may be used effectively it would seem to be wise experiment station policy and in keeping with research grant legislation to make certain not only that the amount of research time allotted them is adequate but also that the time assigned them for teaching and other duties is so distributed as not to interfere with the vigorous and effective prosecution of the research. It would seem that only on such a basis is there justification for allowing those engaged in instructional and other college duties to undertake experiment station research and to receive proportionate salary from research funds, especially Federal grant funds.